

Radtke, Meghan

From: Roewer, James <JRoewer@eei.org>
Sent: Wednesday, March 18, 2015 3:45 PM
To: Johnson, Barnes
Subject: CCR Issues
Attachments: CCR Rule Critical Issues 03-16-2015.pdf

Categories: Record Saved - Shared

Barnes – FYI

Earlier today at the EEI CEO Meeting, in a one-on-one meeting, Nick Akins (AEP) teed up two issues that we had previously discussed with you at our Jan 26th meeting: the 18 m safety factor assessment deadline under 257.72, and the alternative capacity for non-CCR wastewaters under 257.103. Attached is a summary of those issues, which is consistent with the discussion at our February meeting.

Please call w any questions.

The CEO CCR Staff-level workgroup identified two critical issues that warrant follow-up discussions with EPA. The issues, including recommended solutions, are outlined below:

Periodic Safety Factor Assessments under § 257.72(e)

Owners and operators must conduct an initial safety factor assessment no later than 18 months after publication of the final rule. If the owner/operator fails to meet that deadline, or fails to demonstrate the disposal unit meets the minimum safety factor, within six months the owner operator must cease placing CCR and non-CCR waste streams in the unit and initiate closure with no opportunity to continue to use the unit under alternative closure requirements under § 257.103.

In some instances, completing assessments, including the design and implementation of any engineering solutions necessary to ensure CCR impoundments meet the calculated safety factor, may take more than 18 months. This may be caused by complications relating to weather limiting construction timeframes and the time needed to coordinate with and obtain necessary approvals and permits from state regulatory agencies.

Failure to meet the 18 month deadline, and the resultant loss of the CCR and non-CCR waste stream disposal capacity may force the closure of coal-fired power plants.

We support the structural integrity criteria for existing surface impoundments in the rule; however, there may be circumstances where additional time is necessary to meet the assessment deadline, but only if it can be shown that the structure does not pose an immediate threat of release or failure.

Solution: EPA should provide the ability to gain an extension of up to one year to complete the safety assessment, including any construction/repairs to the CCR impoundment, provided that the owner/operator can certify that the structure does not pose an immediate threat of release or failure and the work can be completed within one year of the original deadline.

Alternative Closure (Lack of On-site/Off-site Disposal Capacity):

Under the alternative closure requirements at § 257.103, CCR units are allowed to continue to operate for a limited period of time if, among other things, the owner/operator can certify that CCR materials must continue to be managed in the unit due to the absence of alternative disposal capacity.

The lack of alternative disposal capacity provision should also apply to non-CCR waste streams managed in the unit, because impoundments often serve multiple functions, including managing non-CCR waste streams subject to regulation under the effluent

limitation guidelines for CCR units. Without the extension of this provision, the lack of alternative disposal capacity for non-CCR waste streams could effectively lead to the unnecessary shutdown of coal-fired power plants.

In the rule preamble, EPA articulated a policy that it did not intend for the accelerated closure of surface impoundments to result in the closure of the power plants and the resulting disruption of power to the wider community. Pre-pub. at 442-443.

It is therefore important that the alternative closure provision also enable owners/operators to consider whether there is alternative disposal capacity for non-CCR waste streams managed in the affected units in addition to the CCR.

Solution: EPA should make a technical correction to the regulatory text to clarify that the lack of on- or off-site disposal capacity for both CCR and non-CCR wastewaters managed in a CCR impoundment should be evaluated when applying alternative closure requirements under § 257.103(a).

Radtke, Meghan

From: Roewer, James <JRoewer@eei.org>
Sent: Thursday, May 14, 2015 1:25 PM
To: Johnson, Barnes
Subject: Follow-up to Voicemail

Barnes

In response to your voice mail, I agree that a meeting to review the CCR rule compliance questions would make sense. I realize that you are out of the office through the end of this week.

Would you and your staff be available May 26 or May 29?

Jim

Radtke, Meghan

From: Roewer, James <JRoewer@eei.org>
Sent: Thursday, May 14, 2015 3:47 PM
To: Stanislaus, Mathy
Cc: Johnson, Barnes; John McManus; Meiers, Jim; Craig Shamory
Subject: RE: Conference Call CCR Rule
Attachments: Dam Safety Factor Summaries 05142015.pdf

Mathy/Barnes: In preparation for Tuesday's call, attached please find some information received from utilities re the need for additional time to meet the dam safety factors in 257.73.

We look forward to discussing this issue with you next week.

-----Original Appointment-----

From: Hill.Teresa@epa.gov [<mailto:Hill.Teresa@epa.gov>] **On Behalf Of** Stanislaus, Mathy
Sent: Wednesday, April 29, 2015 3:39 PM
To: Stanislaus, Mathy; Roewer, James
Cc: John McManus; Johnson, Barnes
Subject: Conference Call CCR Rule
When: Tuesday, May 19, 2015 10:00 AM-10:30 AM (UTC-05:00) Eastern Time (US & Canada).
Where: 3146 epaw Conference Call 1-866-299-3188 code 202-566-0184

From: Roewer, James [<mailto:JRoewer@eei.org>]
Sent: Friday, April 10, 2015 4:06 PM
To: Hill, Teresa
Cc: Stanislaus, Mathy
Subject: Request to Schedule Conference Call
Importance: High

Ms. Hill:

I would like to schedule a conference call in follow-up to a teleconference held last month between Administrator McCarthy and Nick Akins, CEO of American Electric Power, re coal combustion residuals (CCR) regulation. At the conclusion of the McCarthy – Akins call, it was agreed that a follow-up call, between AA Stanislaus and John McManus, AEP, was appropriate to discuss further the issue of compliance deadlines for completing dam safety factor assessments under the recent CCR rule, including additional information regarding utility activities necessary to complete such assessments. I am writing to schedule that follow-up call.

Could you please identify potential dates/times for the week of April 20? Hopefully we can identify some options, and then Can then coordinate with Mr. McManus, and other industry representatives, regarding their availability, and confirm the call.

Please contact me with any questions, etc.

Thank you,

Jim

Jim Roewer
Executive Director
USWAG

<< File: ATT22752 1.jpg >>

Compliance with Periodic Safety Factor Assessments Under § 257.73(e) Additional Time is Necessary to Avoid Power Plant Closures

The electric utility industry is committed to safety in all our operations. The industry supported the structural stability requirements in the CCR proposal and is committed to meeting the dam safety factors (§ 257.73(e)) in the final CCR rule.

In the case of demonstrating compliance with the dam safety factors, however, the final CCR rule provides a very limited time frame—only 18 months—to perform the engineering analysis, engineer any improvements needed, obtain the necessary permits from both state and federal regulators, and then construct whatever solutions are determined to be needed to meet the specified safety factors. In many cases, it will not be possible to make the necessary repairs to an impoundment to meet the dam safety factors within 18 months.

In most cases, before any work can begin after a deficiency is identified, approvals must be received from the appropriate state and sometimes federal permitting agencies to conduct any necessary work on the impoundment. The length of time to obtain these approvals is outside the control of the owner/operator and can easily take a year, if not longer, depending on the type of permit and the regulatory agency issuing it. Only after the necessary permits/approvals are obtained, can the utility begin making the necessary repairs to meet the safety factors. Therefore, utilities that are ready, willing and able to make the necessary repairs will miss the 18 month deadline because of factors outside of their control. Missing the deadline means that the impoundment must close (with no opportunity under the rule for extended operation), which will result in the closure of power plants in circumstances where the impoundment at issue is the only unit that can receive CCR and/or wastewaters associated with power production.

The following information, provided by representative power plants across the country, underscores the need for additional time to meet the dam safety factor assessment.

1. Company A - At least 3 years to complete

Company A was required to perform stability and hydraulic assessments similar to the final CCR rule requirements due to EPA's CCR surface impoundment "inspections" at each of its coal-fired facilities in 2009. As a result of such assessments, repairs were necessary to ensure compliance with both the stability and hydraulic expectations established by EPA. This process took over 3 years from assessment to completion of repairs. This timeframe was needed to:

- fully vet the deficiencies in a responsible and prudent manner;
- verify the most reasonable cost option to address the deficiencies;
- obtain approval from within the corporate organization; and
- obtain approvals from both environmental regulatory agencies (permits) and utility regulatory commission.

Based on Company A's experience, an 18 month timeframe to meet the dam safety factor requirements in the rule is extremely challenging, if not infeasible.

2. Company B – At least 2 years (under best circumstances) to complete

Company B undertook two embankment upgrading projects that were undertaken after an EPA inspection found two ash ponds to be either "unsatisfactory" or "poor" with respect to dam safety. The upgrade occurring at the X Power Station began in February 2013 and was

completed in February 2015. The upgrade occurring at the Y Power Plant began in March 2014 and has not yet been completed. More detailed timelines for each project are provided below:

X Power Station:

- Feb.–May 2013: Perform geotechnical investigation and engineering design and prepare permit drawings
- May 2013: Submit dam safety permit application to state agency
- Feb. 2014: Receive dam safety permit from state agency
- Mar.–July 2014: Prepare construction drawings and RFP, issue RFP, and accept bids for project
- Aug. 2014: Select contractor and issue notice to proceed
- Sept. 2014: Begin construction (note delays due to high river conditions)
- Dec. 2014: Complete construction
- Jan.–Feb. 2015: Prepare and submit as-built drawings to state agency

Y Power Plant:

- Mar. 2014: Analyze options (close ponds or rebuild berms)
- May 2014: Perform survey work
- Aug.–Oct. 2014: Evaluate remaining capacity of secondary fly ash pond and select buttress design for necessary ash storage volume.
- Nov.–Dec. 2014: Begin design phase
- Jan. 2015: Perform additional surveying
- Feb.–Mar. 2015: Complete stability and design and submit drawings to state agency
- April 2015: Submit state agency permit application

Note that geotechnical information at the Y Power Plant had been historically obtained during multiple iterations of berm evaluation.

3. Company C – At least 16.5 months to get approvals to begin construction

State requires Company C to obtain state permits to work on its impoundments under both waste and dam safety authorities, as well as any related wetlands or waterways permitting. This permitting typically takes about a year to complete after Company C has developed a compliance plan. This means that completion of any changes necessary to meet the dam safety factor requirements under the rule would likely take more than 18 months.

In the last few years, Company C performed work at its X Power Plant facility to repair the dam's seepage collection system. Below is a general description of the timeframe needed to receive approval by the state agency Dam Safety Group to begin work.

- March 6, 2013: Initial request for approval:
- Mar. 2013–Sept. 2013: called and emailed several times inquiring on status of approval
- Sept. 20, 2013: state agency request for drawing changes
- Oct. 4, 2013: Company C inquires on status of approval
- Nov. 1, 2013: state agency issues additional comments
- Dec. 6, 2013: Company responds to comments
- April 23, 2014: state agency issues additional comments after Company C requests status of approval

- April 24, 2014: Company C responds to state agency comments
- May 5, 2014: Company C inquires on status of approval
- May 21, 2014: state agency grants approval

A total of 349 days passed from the time Company C submitted its initial request for approval until state agency granted approval to begin work.

18 months would be an extremely challenging timeframe in State X to complete a large slope stability project at an ash basin. Company C estimates that it would require approximately 15.5 months to take all steps necessary to begin work for a dam improvement project. This timeframe is based on the following:

- 1.5 months: Complete stability report completed (1 month of groundwater monitoring required after piezometers are installed);
- 1 months: internal approval for funding of dam capital improvement project
- 1 months: design and prepare documents for submission to state agency
- 1 year: Review of submission by state agency Dam Safety Group;

Company C would then have only 2.5 months to complete the work in order to meet the 18 month timeframe under the rule. The means that, in 2.5 months, Company C would have to mobilize the contractor (assuming an earthwork contractor is under contract while the state agency undertakes its review), acquire and deliver all material to on site (material cannot be purchased until the state agency approves the design and material), and complete construction. This would all have to occur while dealing with unknown weather-related impacts and performing as-builts with engineer certification.

4. Company D – At least 20 months in one case and 25.5 to 43.5 months in another case

There are several potential issues associated with completing the safety factor assessments and modifications within the rule's 18 month deadline:

- Between two power plant sites, there are at least eight impoundments that will need safety factor assessments IAW the new standard.
- Some of the previous factor of safety calculations used a less stringent standard of 1.4 for long-term safety vs. the required ≥ 1.5 .
- Dam safety calculations have become more conservative throughout the years, and some existing facilities may have been "grandfathered in" under a less stringent standard, increasing the likelihood that additional construction will be required.
- Based on previous experience, it is anticipated that State permitting (including design calculations) could take up to one year for approval to construct in State X. This permitting timeframe leaves very little time for actual construction.

Assuming the required safety factors are not met, an idealized, general scenario would be to add a toe buttress on the downstream slope of an earthen embankment. A best-case timeline for doing this work in State X is provided below:

- 60 days to perform safety factor assessment
- 1 year to design and obtain an approved permit through state regulatory bodies
- 30 days for bid packages and procurement prior to releasing "issued for construction" package
- 30 days from "issued for construction" package to receipt of bids

- 14 days to evaluate bid packages
- 21 days to negotiate terms and conditions and award contract
- 30 days for contractor mobilization
- 30 days for construction (assuming small package 100,000 cubic yards—if the construction increased to 500,000 cubic yards, construction time would easily increase to 90+ days)
- 14 days for contractor to mop-up/cleanup site prior to in-service (larger size jobs this could take up to four weeks)

This is a total of 594 days—approximately 20 months—from start to completion total of days approximately 1.6 years (20 month)

As indicated above, this is a hypothetical scenario for adding a small buttress on the downstream toe. If the buttress size increased, the construction would increase by 3 to 9 months, depending upon size. The hypothetical scenario also assumes the availability of borrow material. If land purchase is needed to make a borrow pit, additional time would be needed. In addition, if any obstacles are encountered (which happen in construction) the timeline would also increase. Although some of the steps could be run in parallel rather than consecutively, doing so could put the project at financial risk and result in additional costs for redesign or change orders with a contractor.

A more detailed timeline for Company D's facility is presented below:

Stability Analysis Timeframe:

- 15 days: Contract engineering firm
- 45 days: Prepare preliminary engineering report summarizing existing conditions, known geotechnical data, and preliminary calculated Factors of Safety
- 15 days: Develop action plan and scope of work to address deficiencies
- 60 days: Perform geotechnical investigation and get laboratory test results
- 45 days: Prepare final geotechnical report identifying recommended construction to improve dam safety
- 180 days: Perform geotechnical investigation and stability analysis

Total Timeframe for Stability Analysis: 6 months

Engineering Design Timeframe:

- 15 days: Contract engineering firm
- 45 days: Prepare initial concepts, suitable for initial informal meeting with state agency Dam Safety officials
- 60 days: Prepare final design package, including engineering design report, technical specifications, and construction drawings suitable for submission to state agency
- 120 days: Dam safety engineering

Total Timeframe for Engineering Design: 4 months

Dam Safety Licensing Timeframe:

- 120 days: Administrative completeness review (per State administrative code)
- 30 days: Responses to any completeness review deficiencies
- 60 days: Substantive Review (per State administrative code)

- 30 days: Responses to any substantive review deficiencies
- 30 days: Preparation and submission of final construction documents and engineering design report reflecting all substantive review comments
- 15 days: Receive final state agency-stamped set of drawings for use for construction bidding and contracting
- 285 days: Dam safety construction permitting

Total Timeframe for Licensing: 9.5 months

Bidding and construction timeframes would depend on the project's complexity and the volume of construction but would be no less than 6 months and could be as long as 24 months. This means that 25.5 to 43.5 months would be required from start to completion.

5. Company E – At least 25 to 36 months to complete; safety factor deadlines threatens continued operation of facility

The 18 month timeframe to meet the rule's required dam safety factor likely is not sufficient, particularly for facilities which may require remedial or corrective action work in order to achieve the required factors of safety. While some facilities may have been reviewed previously for structural integrity factors of safety, these previous investigations are out of date with respect to the new CCR rule requirements and would require new studies be performed. The new rule also requires CCR facilities to be evaluated for both static and seismic conditions.

The time required to complete these evaluations will vary by site and the proposed allowable 18 month timeframe will not be sufficient for those sites that cannot demonstrate adequate factors of safety for existing conditions. At those sites, structural modifications may be required to achieve the required factors of safety. While it appears the initial assessment may be achievable within the 18 month timeframe, the subsequent identification, planning, permitting, and implementation for corrective actions for those sites not initially meeting the requirements is anticipated to add significant time and could easily take 30 months or more to complete from start to finish. The following is general outline and timeframe of efforts/tasks that may be required to complete the structural integrity determinations:

- Work Plan Development: 2-3 months
 - Identify available information and determine needed information
 - Develop plan for investigations
- Field & Geotechnical Lab Investigations: 3-4 months
 - Procure subcontractors
 - Permit project (as necessary)
 - Surveying, field & lab work
 - Some facilities may have not required seismic evaluations previously, and may require site specific data (material properties, seismic site response parameters, etc.) previously not obtained
- Technical Review & Factor of Safety Determination: 2-4 months
- Identify Issues and Possible Corrective Actions: 2 months
- Corrective Action Work Plan: 2 months
- Corrective Action Permitting: 6-9 months
 - Most ponds are NPDES permitted which require permit approvals for modifications
- Corrective Action Implementation: 6-12 months
 - Bid/procure subcontractors, perform the work, as-built surveys, and engineering verification of correction & resulting FOS

Total time: 25 – 36 months

As outlined above, the time to satisfactorily demonstrate structural integrity for some facilities may take 30 months or more. It should be noted that the above time allotment are considered aggressive.

6. Company F – At least 29 months to 41 months; safety factors deadline will cause closure of power plants

While Company F has accelerated all phases of work to assure all the active CCR impoundments are in compliance with § 257.73, it has been determined that several of its power plants are at risk of a forced shutdown due to permitting and construction timeframes that may not be completed before the 18 month deadline for compliance. Shutdowns could occur not because there is an imminent risk of failure of these impoundments, but because an owner has not been given enough time to complete the appropriate modification to the impoundments to bring the impoundments up to the §257.73 standards. This shutdown will be due to the lack of disposal for bottom ash and wastewater treatment for low volume waste and due to the forced closure of the one existing impoundment or impoundment complex that does not meet the new standards.

The following summarizes the list of steps taken or have to be taken by Company F in assessing the impoundments, conducting the analysis of compliance with § 257.73, developing designs or modifications necessary to comply with § 257.73, obtaining the permits to conduct the work, conducting the work, and having the project certified by a PE that it is compliant with the rule.

- May 2014: Begin conducting programmatic assessments of all impoundments that support the coal and gas fired boilers for coal ash disposal or wastewater treatment. The assessments were conducted in two consecutive phases.
 - Phase I: Initial engineering investigations, review of initial assessments and field inspections (5 months)
 - Phase II: Engineering analysis of existing designs for all new dam safety factors, reconstitution of design to meet CCR requirements (5 months)
- Feb./March 2015: Begin development and submittal of permit applications for state and federal permits to complete design modifications necessary for compliance
 - Development and submittal of applications for modification and receipt of the state dam permits or approvals for the dike or dams needed to start of construction (3 to 6 months)
 - Development and submittal of permit applications to Army Corps of Engineers for construction in the floodway if needed to complete modifications to the dams or berms that are adjacent to rivers. (9 to 12 months)
 - Development and submittal of NPDES permit application for new impoundments or alternative wastewater treatment that includes new discharge point source (18 to 24 months)

The timeframes for completing design modifications to a dam to achieve compliance with § 257.73 or the alternative management option to provide bottom ash disposal with alternative low volume wastewater treatment cannot be completed until all appropriate state and federal permits are received.

Below is the estimated construction timeframes to complete the various options being considered by Company F. All work will be completed on an accelerated schedule. These various redesign projects for impoundments that do not meet the structural integrity criteria will vary according to the size of the impoundment. The construction estimates below will address modifications to existing valley fill impoundments with dams that can range in length from 2,500 feet to 1,200 feet with heights of 130 feet to 60 feet. For impoundments constructed with berms the length of the perimeter can be as long as 4,000 to 5,000 feet with heights up to 25 to 30 feet.

The estimated timeframes below capture multiple projects varying in size that could utilize the same engineering solution thus the schedules are listed as ranges. The alternative solution to modification of the dams or berms is to build a much smaller composite lined impoundment (30 to 50 acres) to manage the low volume wastewaters and to convert to dry bottom ash handling for dry disposal in a landfill. This option has the longest completion schedule and may not be an option if the existing ponds are forced to initiate closure before the new pond is constructed. All existing flows of wastewater must be redirected to the new pond to maintain continuous operation.

Project Construction Schedule Estimates

- Construct a toe buttress on the impoundments existing dam using imported soil compacted or using imported crushed stone aggregate: 12 to 18 months
- Install weighted overlay filter upgrade to external dam slope: 18 months
- Soil improvement (deep soil mixing), soil improvement (soil mixing or stone columns): 16 to 24 months
- Convert to dry bottom ash handling, construct new composite lined impoundment to treat non CCR wastewaters, re-direct existing flows (stormwater, coal pile run-off, FGD wastewater, low volume wastewaters) to the new pond: at least 24 months

7. Company G – 18 Months Too Short a Time Period & Could Cause Closure of Power Plant If Impoundment Has to Close

While Company G hasn't completed a dam factor safety assessments yet, real concern that is a problem is detected, 18 months will be too short a time period to correct.

Assessment, identification of actions needed to achieve compliance, engineering plans, selection of a contractor and obtaining permits are all needed before a second assessment (after work is performed); these items all take time to eventually determine we are meeting all these requirements. *The timeframe to complete this work can often exceed 18 months when considering our location (far north) restricts the timeframe we may work due to weather (freezing soils, freezing river, ice jams, spring floods).* Considerations of when we may perform activities also requires working around times where endangered species habitat areas or when fish have spawning restrictions. We may also have to consider cultural resources when planning in these areas; or identify suitable areas to replace riparian habitat or wetlands that may be impacted.

We do not have alternatives in place to manage CCR and non-CCR from our facility yet, and if required to cease operation of the impoundment; it will threaten the continued operation of the power plant due to this issue and the short timeframe to achieve compliance.

8. Company H – It Can 18 Months Alone to Obtain Necessary Permits, and an Additional Two Years to Undertake the Necessary Construction

Company H will be moving swiftly to complete the required structural stability assessment and Factor of Safety demonstrations for our CCR impoundment(s). Completion of the demonstrations by a qualified P.E. may take two to three months. In the event an impoundment does not meet EPA requirements, it may take an additional month or two to determine dike remediation costs, other options and select a path moving forward. Remediation of a dike structure or construction of a new impoundment or landfill would require permits with the state agency departments of Environmental Quality and Water Resources. In addition, there is Special Use permitting required through County X for new construction.

Permit revisions for remediation of a dike structure could take 6-12 months. Permitting for the original impoundments construction was a two year process. It is a known fact that State X has reduced permitting Agency staffing and permit revisions often take several years to be completed. Thus, in the event of an impoundment needing remediation, the permitting process alone could take 18 months. This does not include any construction. This could potentially force Company H to close an impoundment(s) instead of remediation.

9. Company I – Detailed Timeline Analysis Shows that It Would Take To Until At Least July 17, 2017 to Make Necessary Repairs to Meet Dam Safety Factors – Deadline is October 17, 2016.

Company I believes that there may be instances where a CCR impoundment may not meet the initial factor of safety requirements of the CCR rule, but may be remediated to meet the required factor of safety. In such an instance, the timeline provided by the rule may not allow such remedial measures to occur. This may force closure of CCR impoundments that may otherwise meet all the rule requirements. An example of this situation has been outlined by our dam safety group (experienced in working on these types of projects) and is provided below:

Example – Seismic Upgrade

This example assumes that the structural stability analysis determines that a CCR embankment does not meet the required factor of safety under a seismic loading. The remediation would consist of building an earthen berm on the exterior of the CCR embankment to increase stability. The example also assumes that wetland vegetation exists at the exterior toe of the CCR embankment from concentration of surface water runoff, resulting in permitting requirements. The facility is located where temperatures are below freezing for much of the winter, limiting earthwork construction techniques from April through September.

This example uses the April 17, 2015 CCR rule publication date, and assumes studies begin immediately with rules becoming effective. The tasks that are on the critical path for this example are provided in the table below, and indicate that a deficient facility could not be remediated within the 18 months stipulated by the rule. Even with full completion of concurrent study type tasks and analyses, adequate design and complete construction of the remediated CCR embankment could not be accomplished within the rule mandated timeframe of 18 months.

Task	Estimated Duration	Task Finish Date
------	--------------------	------------------

Assemble Construction History [257.73(c)(1)]	3 months	July 17, 2015
Perform Structural Stability Analyses [257.73(d-e)] Geotechnical Data Collection (drilling and laboratory testing)	4 months	November 17, 2015
Seismic Stability Analysis Assume stability analysis indicates facility requires modification to meet safety factor requirements	4 months	March 17, 2016
Design Remedial Measure	3 months	June 17, 2016
Obtain permits and other regulatory approvals (may be longer due to agency approval delays)	3 months	September 17, 2016
Weather delay for frozen conditions (may be longer than 6 months due to weather conditions)	6 months	March 17, 2017
Construction to meet minimum safety factors	4 months	July 17, 2017
Deadline to meet minimum safety factors: October 17, 2016		

Radtke, Meghan

From: Roewer, James <JRoewer@eei.org>
Sent: Thursday, June 04, 2015 3:50 PM
To: Stanislaus, Mathy
Cc: Johnson, Barnes
Subject: Follow-up to Teleconference re 257.73(e) Safety Factor Assessment
Attachments: 257.73Letter 06042015.pdf; Dam Safety Factor Summaries 06042015.pdf

Importance: High

Mathy:

Attached please find a letter, with attachment, regarding the utility industry's concerns with the deadlines for compliance with the dam safety factor assessment in the new CCR rule at 257.73(e).

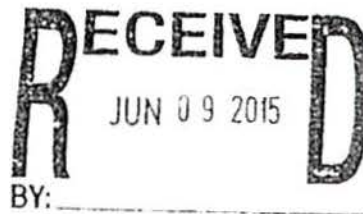
We look forward to discussing this matter with you further later this month.

Please contact we with any questions, etc.

Jim



Edison Electric
Institute



June 4, 2015

The Honorable Mathy Stanislaus
Assistant Administrator
Office of Solid Waste and Emergency Response
5101T
Environmental Protection Agency
1200 Pennsylvania Avenue, N.W.
Washington, DC 20460

Re: Deadline for Compliance with the CCR Rule's Dam Safety Factors

Dear Mathy:

Thank you again for taking the time to discuss the industry's concerns with the practical impediments that will prevent certain utilities from meeting the deadline for compliance with the dam safety factor criteria in the final coal combustion residuals ("CCR") rule (40 C.F.R. § 257.73(e)). As we emphasized during our call, our concerns have nothing to do with the substantive requirement to meet the dam safety factors; the utility industry has always been fully supportive of the dam safety criteria throughout the rulemaking process, as the continued safe operation of our CCR units is of the utmost importance to the industry.

Rather, the issue is one solely of timing. As explained during the call, if we had known that the final rule was going to allow only 18 months to assess compliance with the safety factors *and* make any necessary repairs to meet the criteria, we would have pointed out that this simply is not enough time in many cases to complete these actions. We have attached again, for your convenience, a compilation of responses from various utilities from across the country underscoring this point.

This issue is of paramount importance to the industry—this is why it has been raised directly with the Administrator. The failure to meet this deadline results in the forced closure of the surface impoundment, even where the facility has no alternative disposal capacity available for its CCR and non-CCR waste streams. Our concern is that closures of these disposal units could result in the abrupt closure of some generating units, a consequence EPA has made clear is not the intended effect of the CCR rule. Indeed, EPA expressly recognizes in the preamble to the rule that where a facility is

required under the rule "to stop generating power, there would be significant risks to human health that would arise if a community would be left without power for an extended period of time." 80 Fed. Reg. 21302, 21423. However, this is precisely the risk presented by the 18 month deadline to certify compliance with dam safety factor criteria.

Regarding the suggestion that the state solid waste management plan route could provide the needed additional time, we would like to point out that in the rule preamble, EPA suggests that any extensions to the rule's deadlines via state compliance plans should be given out only in rare circumstances, including in instances involving the rule's structural integrity requirements. In addition, EPA states that anyone seeking an extension by a state to the deadlines for the structural integrity requirements would have a "heavy burden" to demonstrate that anything other than a minor amount of time is warranted. (80 Fed. Reg. 21432, middle column). In light of EPA's position, states might be reluctant to give any extensions to the rule's dam safety criteria deadline. We appreciate that you understand this problem and also appreciate your willingness to think about potential solutions. You have suggested that one solution is for affected utilities to seek compliance orders by the respective states extending the dam safety factor certification pursuant to section 4005(a) of RCRA. While an alternative compliance schedule issued by a state may be able to provide relief for the affected utilities, we are concerned about the utilities' ability to timely receive such compliance schedules.

Under the rule, a CCR surface impoundment must meet the required dam safety factors by no later than October 17, 2016. Therefore, a utility with a CCR surface impoundment that is unable to meet the dam safety factors by that deadline must receive by that same deadline an alternative compliance schedule to avoid the requirement to cease receipt of CCR and to close. We are concerned that, under the suggested approach, this will be impossible to do, given that a number of steps must be taken by parties other than the utility before a compliance schedule can be issued.

First, a state must incorporate the CCR rule into its solid waste management plan. At this point, it is not at all clear that all the states will attempt to do this. Assuming that a state does pursue this option, the process for doing so will vary from state to state and a number of factors can influence the time it takes to do so, including limited funding and/or resources and any necessary state law changes that must be passed by the state legislature. For example, the Missouri Department of Natural Resources recently indicated to a USWAG member that it could take up to three years for the state to incorporate the CCR rule into its state regulations, and that this timeline could be even further delayed due to limited funding and the necessary changes to state law. Obviously, this time frame is far too late to be of any value for a utility confronting the October 17, 2016 dam safety factor certification deadline.

Second, after the state adopts the CCR rule into its state solid waste management plan, it must submit the plan to EPA for approval. While we understand that EPA will use its best efforts to quickly review and approve the plans, the timeline for completing this process will be dictated, in part, by when the state submits is

application, which as explained above will vary and could take as long three years. The timeframe for EPA approval could also be impacted by the number of state solid waste management plans submitted for review.

Finally, after the state has an approved state solid waste management plan incorporating the CCR rule, it still has to issue the alternative compliance schedule for the utility. Again, although the process for obtaining this may vary from state to state, the time that will be needed to issue such alternative schedules creates additional risk that the October 17, 2016 deadline will not be met.

Thus, while we would like to continue exploring the option of obtaining a state alternative compliance schedule, given our concerns with timing and the absolute necessity for having a certain solution to this problem in place well before October 17, 2016, we believe it is necessary for EPA to consider pursuing a targeted regulatory amendment that would allow for facility-specific extensions under the rule, provided certain conditions are met. Specifically, we recommend that EPA issue a narrow amendment to the rule providing the opportunity for an owner/operator to obtain no more than an 18 month extension for meeting the dam safety factors, *provided* that:

- 1) a qualified, licensed professional engineer certifies, as part of the request for an extension, that, based on the structural integrity assessment factors found in section 257.73(d), there is no imminent threat of failure of the surface impoundment;
- 2) during the extension time period, a qualified, licensed professional engineer conducts inspections of the impoundment no less often than once every two months re-certifying the finding in condition one above that the impoundment does not pose an imminent threat of failure;
- 3) as of October 17, 2016, the owner/operator has taken all steps necessary to obtain the required permits or authorizations to implement the changes needed to meet the dam safety factors; and
- 4) as of October 17, 2016, the owner/operator is still waiting for approval of the required permits or authorization; or, if the permits and authorizations have been received, construction of the necessary improvements is underway but has not been completed due to factors out of the owner/operator's control (such as the timing of issuance of state permits or authorizations, weather conditions, and other seasonal limitations on construction).

The owner/operator would be required to place a certification that it meets the above conditions into its operating record and on its publicly available internet site. Again, this would not be a blanket extension of the dam safety certification deadline, but rather a narrow amendment to the rule allowing for a limited extension for a finite period of time when certain conditions are met, including certifying throughout the necessary extension that the impoundment is not at risk of imminent failure. These requirements would, of course, be in addition to all other structural integrity inspection

requirements applicable to the impoundment under the rule (e.g., the weekly inspections of the impoundments by a qualified person under § 257.83(a) and annual inspection of the impoundments by a qualified profession engineer under § 257.83(b)).

We believe the foregoing approach is an appropriate solution that would address this serious problem with the rule. This approach will ensure that critical components of the nation's power supply are not at risk of shut-down due solely to inadequate time to certify compliance with the dam safety factors. At the same time, it would ensure that during the limited amount of additional time provided to a facility to meet these factors, steps are taken to ensure the continued safe operation of the structure.

Again, we greatly appreciate your willingness to consider this issue and to work with the utility industry to come to an appropriate solution. We look forward to continuing our discussion soon.

Very truly yours,

A handwritten signature in black ink, reading "John M. McManus". The signature is written in a cursive, flowing style with a large initial "J" and "M".

John M. McManus
Vice President, Environmental Services
American Electric Power

Chairman,
Environment Executive Advisory
Committee
Edison Electric Institute

Compliance with Periodic Safety Factor Assessments Under § 257.73(e) Additional Time is Necessary to Avoid Power Plant Closures

The electric utility industry is committed to safety in all our operations. The industry supported the structural stability requirements in the CCR proposal and is committed to meeting the dam safety factors (§ 257.73(e)) in the final CCR rule.

In the case of demonstrating compliance with the dam safety factors, however, the final CCR rule provides a very limited time frame—only 18 months—to perform the engineering analysis, engineer any improvements needed, obtain the necessary permits from both state and federal regulators, and then construct whatever solutions are determined to be needed to meet the specified safety factors. In many cases, it will not be possible to make the necessary repairs to an impoundment to meet the dam safety factors within 18 months.

In most cases, before any work can begin after a deficiency is identified, approvals must be received from the appropriate state and sometimes federal permitting agencies to conduct any necessary work on the impoundment. The length of time to obtain these approvals is outside the control of the owner/operator and can easily take a year, if not longer, depending on the type of permit and the regulatory agency issuing it. Only after the necessary permits/approvals are obtained, can the utility begin making the necessary repairs to meet the safety factors. Therefore, utilities that are ready, willing and able to make the necessary repairs will miss the 18 month deadline because of factors outside of their control. Missing the deadline means that the impoundment must close (with no opportunity under the rule for extended operation), which will result in the closure of power plants in circumstances where the impoundment at issue is the only unit that can receive CCR and/or wastewaters associated with power production.

The following information, provided by representative power plants across the country, underscores the need for additional time to meet the dam safety factor assessment.

1. Company A - At least 3 years to complete

Company A was required to perform stability and hydraulic assessments similar to the final CCR rule requirements due to EPA's CCR surface impoundment "inspections" at each of its coal-fired facilities in 2009. As a result of such assessments, repairs were necessary to ensure compliance with both the stability and hydraulic expectations established by EPA. This process took over 3 years from assessment to completion of repairs. This timeframe was needed to:

- fully vet the deficiencies in a responsible and prudent manner;
- verify the most reasonable cost option to address the deficiencies;
- obtain approval from within the corporate organization; and
- obtain approvals from both environmental regulatory agencies (permits) and utility regulatory commission.

Based on Company A's experience, an 18 month timeframe to meet the dam safety factor requirements in the rule is extremely challenging, if not infeasible.

2. Company B – At least 2 years (under best circumstances) to complete

Company B undertook two embankment upgrading projects that were undertaken after an EPA inspection found two ash ponds to be either "unsatisfactory" or "poor" with respect to dam safety. The upgrade occurring at the X Power Station began in February 2013 and was

completed in February 2015. The upgrade occurring at the Y Power Plant began in March 2014 and has not yet been completed. More detailed timelines for each project are provided below:

X Power Station:

- Feb.–May 2013: Perform geotechnical investigation and engineering design and prepare permit drawings
- May 2013: Submit dam safety permit application to state agency
- Feb. 2014: Receive dam safety permit from state agency
- Mar.–July 2014: Prepare construction drawings and RFP, issue RFP, and accept bids for project
- Aug. 2014: Select contractor and issue notice to proceed
- Sept. 2014: Begin construction (note delays due to high river conditions)
- Dec. 2014: Complete construction
- Jan.–Feb. 2015: Prepare and submit as-built drawings to state agency

Y Power Plant:

- Mar. 2014: Analyze options (close ponds or rebuild berms)
- May 2014: Perform survey work
- Aug.–Oct. 2014: Evaluate remaining capacity of secondary fly ash pond and select buttress design for necessary ash storage volume.
- Nov.–Dec. 2014: Begin design phase
- Jan. 2015: Perform additional surveying
- Feb.–Mar. 2015: Complete stability and design and submit drawings to state agency
- April 2015: Submit state agency permit application

Note that geotechnical information at the Y Power Plant had been historically obtained during multiple iterations of berm evaluation.

3. Company C – At least 16.5 months to get approvals to begin construction

State requires Company C to obtain state permits to work on its impoundments under both waste and dam safety authorities, as well as any related wetlands or waterways permitting. This permitting typically takes about a year to complete after Company C has developed a compliance plan. This means that completion of any changes necessary to meet the dam safety factor requirements under the rule would likely take more than 18 months.

In the last few years, Company C performed work at its X Power Plant facility to repair the dam's seepage collection system. Below is a general description of the timeframe needed to receive approval by the state agency Dam Safety Group to begin work.

- March 6, 2013: Initial request for approval:
- Mar. 2013–Sept. 2013: called and emailed several times inquiring on status of approval
- Sept. 20, 2013: state agency request for drawing changes
- Oct. 4, 2013: Company C inquires on status of approval
- Nov. 1, 2013: state agency issues additional comments
- Dec. 6, 2013: Company responds to comments
- April 23, 2014: state agency issues additional comments after Company C requests status of approval

- April 24, 2014: Company C responds to state agency comments
- May 5, 2014: Company C inquires on status of approval
- May 21, 2014: state agency grants approval

A total of 349 days passed from the time Company C submitted its initial request for approval until state agency granted approval to begin work.

18 months would be an extremely challenging timeframe in State X to complete a large slope stability project at an ash basin. Company C estimates that it would require approximately 15.5 months to take all steps necessary to begin work for a dam improvement project. This timeframe is based on the following:

- 1.5 months: Complete stability report completed (1 month of groundwater monitoring required after piezometers are installed);
- 1 months: internal approval for funding of dam capital improvement project
- 1 months: design and prepare documents for submission to state agency
- 1 year: Review of submission by state agency Dam Safety Group;

Company C would then have only 2.5 months to complete the work in order to meet the 18 month timeframe under the rule. The means that, in 2.5 months, Company C would have to mobilize the contractor (assuming an earthwork contractor is under contract while the state agency undertakes its review), acquire and deliver all material to on site (material cannot be purchased until the state agency approves the design and material), and complete construction. This would all have to occur while dealing with unknown weather-related impacts and performing as-builts with engineer certification.

4. Company D – At least 20 months in one case and 25.5 to 43.5 months in another case

There are several potential issues associated with completing the safety factor assessments and modifications within the rule's 18 month deadline:

- Between two power plant sites, there are at least eight impoundments that will need safety factor assessments IAW the new standard.
- Some of the previous factor of safety calculations used a less stringent standard of 1.4 for long-term safety vs. the required ≥ 1.5 .
- Dam safety calculations have become more conservative throughout the years, and some existing facilities may have been "grandfathered in" under a less stringent standard, increasing the likelihood that additional construction will be required.
- Based on previous experience, it is anticipated that State permitting (including design calculations) could take up to one year for approval to construct in State X. This permitting timeframe leaves very little time for actual construction.

Assuming the required safety factors are not met, an idealized, general scenario would be to add a toe buttress on the downstream slope of an earthen embankment. A best-case timeline for doing this work in State X is provided below:

- 60 days to perform safety factor assessment
- 1 year to design and obtain an approved permit through state regulatory bodies
- 30 days for bid packages and procurement prior to releasing "issued for construction" package
- 30 days from "issued for construction" package to receipt of bids

- 14 days to evaluate bid packages
- 21 days to negotiate terms and conditions and award contract
- 30 days for contractor mobilization
- 30 days for construction (assuming small package 100,000 cubic yards—if the construction increased to 500,000 cubic yards, construction time would easily increase to 90+ days)
- 14 days for contractor to mop-up/cleanup site prior to in-service (larger size jobs this could take up to four weeks)

This is a total of 594 days—approximately 20 months—from start to completion total of days approximately 1.6 years (20 month)

As indicated above, this is a hypothetical scenario for adding a small buttress on the downstream toe. If the buttress size increased, the construction would increase by 3 to 9 months, depending upon size. The hypothetical scenario also assumes the availability of borrow material. If land purchase is needed to make a borrow pit, additional time would be needed. In addition, if any obstacles are encountered (which happen in construction) the timeline would also increase. Although some of the steps could be run in parallel rather than consecutively, doing so could put the project at financial risk and result in additional costs for redesign or change orders with a contractor.

A more detailed timeline for Company D's facility is presented below:

Stability Analysis Timeframe:

- 15 days: Contract engineering firm
- 45 days: Prepare preliminary engineering report summarizing existing conditions, known geotechnical data, and preliminary calculated Factors of Safety
- 15 days: Develop action plan and scope of work to address deficiencies
- 60 days: Perform geotechnical investigation and get laboratory test results
- 45 days: Prepare final geotechnical report identifying recommended construction to improve dam safety
- 180 days: Perform geotechnical investigation and stability analysis

Total Timeframe for Stability Analysis: 6 months

Engineering Design Timeframe:

- 15 days: Contract engineering firm
- 45 days: Prepare initial concepts, suitable for initial informal meeting with state agency Dam Safety officials
- 60 days: Prepare final design package, including engineering design report, technical specifications, and construction drawings suitable for submission to state agency
- 120 days: Dam safety engineering

Total Timeframe for Engineering Design: 4 months

Dam Safety Licensing Timeframe:

- 120 days: Administrative completeness review (per State administrative code)
- 30 days: Responses to any completeness review deficiencies
- 60 days: Substantive Review (per State administrative code)

- 30 days: Responses to any substantive review deficiencies
- 30 days: Preparation and submission of final construction documents and engineering design report reflecting all substantive review comments
- 15 days: Receive final state agency-stamped set of drawings for use for construction bidding and contracting
- 285 days: Dam safety construction permitting

Total Timeframe for Licensing: 9.5 months

Bidding and construction timeframes would depend on the project's complexity and the volume of construction but would be no less than 6 months and could be as long as 24 months. This means that 25.5 to 43.5 months would be required from start to completion.

5. Company E – At least 25 to 36 months to complete; safety factor deadlines threatens continued operation of facility

The 18 month timeframe to meet the rule's required dam safety factor likely is not sufficient, particularly for facilities which may require remedial or corrective action work in order to achieve the required factors of safety. While some facilities may have been reviewed previously for structural integrity factors of safety, these previous investigations are out of date with respect to the new CCR rule requirements and would require new studies be performed. The new rule also requires CCR facilities to be evaluated for both static and seismic conditions.

The time required to complete these evaluations will vary by site and the proposed allowable 18 month timeframe will not be sufficient for those sites that cannot demonstrate adequate factors of safety for existing conditions. At those sites, structural modifications may be required to achieve the required factors of safety. While it appears the initial assessment may be achievable within the 18 month timeframe, the subsequent identification, planning, permitting, and implementation for corrective actions for those sites not initially meeting the requirements is anticipated to add significant time and could easily take 30 months or more to complete from start to finish. The following is general outline and timeframe of efforts/tasks that may be required to complete the structural integrity determinations:

- Work Plan Development: 2-3 months
 - Identify available information and determine needed information
 - Develop plan for investigations
- Field & Geotechnical Lab Investigations: 3-4 months
 - Procure subcontractors
 - Permit project (as necessary)
 - Surveying, field & lab work
 - Some facilities may have not required seismic evaluations previously, and may require site specific data (material properties, seismic site response parameters, etc.) previously not obtained
- Technical Review & Factor of Safety Determination: 2-4 months
- Identify Issues and Possible Corrective Actions: 2 months
- Corrective Action Work Plan: 2 months
- Corrective Action Permitting: 6-9 months
 - Most ponds are NPDES permitted which require permit approvals for modifications
- Corrective Action Implementation: 6-12 months
 - Bid/procure subcontractors, perform the work, as-built surveys, and engineering verification of correction & resulting FOS

Total time: 25 – 36 months

As outlined above, the time to satisfactorily demonstrate structural integrity for some facilities may take 30 months or more. It should be noted that the above time allotment are considered aggressive.

6. Company F – At least 29 months to 41 months; safety factors deadline will cause closure of power plants

While Company F has accelerated all phases of work to assure all the active CCR impoundments are in compliance with § 257.73, it has been determined that several of its power plants are at risk of a forced shutdown due to permitting and construction timeframes that may not be completed before the 18 month deadline for compliance. Shutdowns could occur not because there is an imminent risk of failure of these impoundments, but because an owner has not been given enough time to complete the appropriate modification to the impoundments to bring the impoundments up to the §257.73 standards. This shutdown will be due to the lack of disposal for bottom ash and wastewater treatment for low volume waste and due to the forced closure of the one existing impoundment or impoundment complex that does not meet the new standards.

The following summarizes the list of steps taken or have to be taken by Company F in assessing the impoundments, conducting the analysis of compliance with § 257.73, developing designs or modifications necessary to comply with § 257.73, obtaining the permits to conduct the work, conducting the work, and having the project certified by a PE that it is compliant with the rule.

- May 2014: Begin conducting programmatic assessments of all impoundments that support the coal and gas fired boilers for coal ash disposal or wastewater treatment. The assessments were conducted in two consecutive phases.
 - Phase I: Initial engineering investigations, review of initial assessments and field inspections (5 months)
 - Phase II: Engineering analysis of existing designs for all new dam safety factors, reconstitution of design to meet CCR requirements (5 months)
- Feb./March 2015: Begin development and submittal of permit applications for state and federal permits to complete design modifications necessary for compliance
 - Development and submittal of applications for modification and receipt of the state dam permits or approvals for the dike or dams needed to start of construction (3 to 6 months)
 - Development and submittal of permit applications to Army Corps of Engineers for construction in the floodway if needed to complete modifications to the dams or berms that are adjacent to rivers. (9 to 12 months)
 - Development and submittal of NPDES permit application for new impoundments or alternative wastewater treatment that includes new discharge point source (18 to 24 months)

The timeframes for completing design modifications to a dam to achieve compliance with § 257.73 or the alternative management option to provide bottom ash disposal with alternative low volume wastewater treatment cannot be completed until all appropriate state and federal permits are received.

Below is the estimated construction timeframes to complete the various options being considered by Company F. All work will be completed on an accelerated schedule. These various redesign projects for impoundments that do not meet the structural integrity criteria will vary according to the size of the impoundment. The construction estimates below will address modifications to existing valley fill impoundments with dams that can range in length from 2,500 feet to 1,200 feet with heights of 130 feet to 60 feet. For impoundments constructed with berms the length of the perimeter can be as long as 4,000 to 5,000 feet with heights up to 25 to 30 feet.

The estimated timeframes below capture multiple projects varying in size that could utilize the same engineering solution thus the schedules are listed as ranges. The alternative solution to modification of the dams or berms is to build a much smaller composite lined impoundment (30 to 50 acres) to manage the low volume wastewaters and to convert to dry bottom ash handling for dry disposal in a landfill. This option has the longest completion schedule and may not be an option if the existing ponds are forced to initiate closure before the new pond is constructed. All existing flows of wastewater must be redirected to the new pond to maintain continuous operation.

Project Construction Schedule Estimates

- Construct a toe buttress on the impoundments existing dam using imported soil compacted or using imported crushed stone aggregate: 12 to 18 months
- Install weighted overlay filter upgrade to external dam slope: 18 months
- Soil improvement (deep soil mixing), soil improvement (soil mixing or stone columns): 16 to 24 months
- Convert to dry bottom ash handling, construct new composite lined impoundment to treat non CCR wastewaters, re-direct existing flows (stormwater, coal pile run-off, FGD wastewater, low volume wastewaters) to the new pond: at least 24 months

7. Company G – 18 Months Too Short a Time Period & Could Cause Closure of Power Plant If Impoundment Has to Close

While Company G hasn't completed a dam factor safety assessments yet, real concern that is a problem is detected, 18 months will be too short a time period to correct.

Assessment, identification of actions needed to achieve compliance, engineering plans, selection of a contractor and obtaining permits are all needed before a second assessment (after work is performed); these items all take time to eventually determine we are meeting all these requirements. The timeframe to complete this work can often exceed 18 months when considering our location (far north) restricts the timeframe we may work due to weather (freezing soils, freezing river, ice jams, spring floods). Considerations of when we may perform activities also requires working around times where endangered species habitat areas or when fish have spawning restrictions. We may also have to consider cultural resources when planning in these areas; or identify suitable areas to replace riparian habitat or wetlands that may be impacted.

We do not have alternatives in place to manage CCR and non-CCR from our facility yet, and if required to cease operation of the impoundment; it will threaten the continued operation of the power plant due to this issue and the short timeframe to achieve compliance.

8. Company H – It Can 18 Months Alone to Obtain Necessary Permits, and an Additional Two Years to Undertake the Necessary Construction

Company H will be moving swiftly to complete the required structural stability assessment and Factor of Safety demonstrations for our CCR impoundment(s). Completion of the demonstrations by a qualified P.E. may take two to three months. In the event an impoundment does not meet EPA requirements, it may take an additional month or two to determine dike remediation costs, other options and select a path moving forward. Remediation of a dike structure or construction of a new impoundment or landfill would require permits with the state agency departments of Environmental Quality and Water Resources. In addition, there is Special Use permitting required through County X for new construction.

Permit revisions for remediation of a dike structure could take 6-12 months. Permitting for the original impoundments construction was a two year process. It is a known fact that State X has reduced permitting Agency staffing and permit revisions often take several years to be completed. Thus, in the event of an impoundment needing remediation, the permitting process alone could take 18 months. This does not include any construction. This could potentially force Company H to close an impoundment(s) instead of remediation.

9. Company I – Detailed Timeline Analysis Shows that It Would Take To Until At Least July 17, 2017 to Make Necessary Repairs to Meet Dam Safety Factors – Deadline is October 17, 2016.

Company I believes that there may be instances where a CCR impoundment may not meet the initial factor of safety requirements of the CCR rule, but may be remediated to meet the required factor of safety. In such an instance, the timeline provided by the rule may not allow such remedial measures to occur. This may force closure of CCR impoundments that may otherwise meet all the rule requirements. An example of this situation has been outlined by our dam safety group (experienced in working on these types of projects) and is provided below:

Example – Seismic Upgrade

This example assumes that the structural stability analysis determines that a CCR embankment does not meet the required factor of safety under a seismic loading. The remediation would consist of building an earthen berm on the exterior of the CCR embankment to increase stability. The example also assumes that wetland vegetation exists at the exterior toe of the CCR embankment from concentration of surface water runoff, resulting in permitting requirements. The facility is located where temperatures are below freezing for much of the winter, limiting earthwork construction techniques from April through September.

This example uses the April 17, 2015 CCR rule publication date, and assumes studies begin immediately with rules becoming effective. The tasks that are on the critical path for this example are provided in the table below, and indicate that a deficient facility could not be remediated within the 18 months stipulated by the rule. Even with full completion of concurrent study type tasks and analyses, adequate design and complete construction of the remediated CCR embankment could not be accomplished within the rule mandated timeframe of 18 months.

Task	Estimated Duration	Task Finish Date
------	--------------------	------------------

Assemble Construction History [257.73(c)(1)]	3 months	July 17, 2015
Perform Structural Stability Analyses [257.73(d-e)] Geotechnical Data Collection (drilling and laboratory testing)	4 months	November 17, 2015
Seismic Stability Analysis Assume stability analysis indicates facility requires modification to meet safety factor requirements	4 months	March 17, 2016
Design Remedial Measure	3 months	June 17, 2016
Obtain permits and other regulatory approvals (may be longer due to agency approval delays)	3 months	September 17, 2016
Weather delay for frozen conditions (may be longer than 6 months due to weather conditions)	6 months	March 17, 2017
Construction to meet minimum safety factors	4 months	July 17, 2017
Deadline to meet minimum safety factors: October 17, 2016		

Radtke, Meghan

From: Stanislaus, Mathy
Sent: Thursday, July 02, 2015 5:03 PM
To: Roewer, James; Bergman, Shawna; Johnson, Barnes; Breen, Barry
Subject: RE: CCR Rule - Impoundment Safety Factor Assessment Follow-up

Thanks Jim. Will you also be providing information that you/utilities were going to develop in advance of the meeting

Sent from my Windows Phone

From: Roewer, James
Sent: 7/2/2015 12:58 PM
To: Stanislaus, Mathy; Bergman, Shawna; Johnson, Barnes
Subject: CCR Rule - Impoundment Safety Factor Assessment Follow-up

Mathy: attached please find a letter in follow-up to our meeting last month discussing the utility industry's concerns with the deadlines for meeting the impoundment safety factors under §257.73.

We are working through Shawna to schedule a meeting the week of July 27th; we look forward to continuing our discussion on this critical issue.

Jim Roewer

Jim Roewer
Executive Director
USWAG





July 2, 2015

The Honorable Mathy Stanislaus
Assistant Administrator Office of Solid Waste and Emergency Response
5101T
Environmental Protection Agency
1200 Pennsylvania Avenue, N.W. Washington, DC 20460

Re: Regulatory Text for CCR Rules Dam Safety Factors Extension

Dear Mathy:

Thank you again for taking the time on June 18th to continue our discussions for identifying the best means for addressing the practical impediments that will prevent certain utilities from meeting the deadline for compliance with the dam safety factor criteria in the final coal combustion residuals ("CCR") rule (40 C.F.R. § 257.73(e)). As we know you appreciate, this issue has nothing to do with the substantive requirement to meet the dam safety factors, but rather is one solely of timing and the need to provide for more than 18 months, in qualified circumstances, to assess compliance with the safety factors *and* make any necessary repairs to meet the criteria.

We appreciate the thoughtful options that EPA is considering to address this problem, including the possibility of the states allowing for more time to meet this requirement if they incorporate the CCR rule into their solid waste management plans ("SWMPs"). However, as discussed during our meeting, given that not all the affected states are committed to adopting the CCR rule (indeed, some have expressly said that they will not adopt the rule), it is apparent that this approach will not be an effective solution. Given this, we continue to believe the best option is a targeted, narrow regulatory amendment that would allow owners or operators of affected facilities a limited amount of additional time to meet the dam safety factors criteria, provided certain conditions are met.

Attached is suggested regulatory text that we believe balances the dual goals of ensuring that a limited amount of additional time is allowed, in qualified circumstances, to meet the criteria, while ensuring that during any extended time period the dam at issue is not at risk of imminent failure. During our discussions on June 18th regarding this approach, it was suggested that additional assurances that the dam is not at risk of failure – beyond the certification of the owner/operator – be included in any regulatory option. We think that suggestion makes sense and have included this additional condition in the attached regulatory text.

Given the rule's impending deadlines and the significant operational and capital investment decisions that utilities must make to ensure compliance with the rule's requirements, we greatly

appreciate your willingness to consider this issue in an expedited manner and to work with the utility industry to come to an appropriate solution. We look forward to continuing our discussion very soon.

Very truly yours,

A handwritten signature in black ink, reading "John M. McManus". The signature is written in a cursive style with a large, stylized "J" and "M".

John M. McManus
Vice President, Environmental Services
American Electric Power

Chairman, Environment Executive Advisory
Committee
Edison Electric Institute

§257.73 Structural integrity criteria for existing CCR surface impoundments.

.....
(f) *Timeframes for periodic assessments - (1) Initial assessments.* Except as provided by paragraphs (f)(2) or (f)(5) of this section, the owner or operator of the CCR unit must complete the initial assessments required by paragraphs (a)(2), (d), and (e) of this section no later than October 17, 2016. The owner or operator has completed an initial assessment when the owner or operator has placed the assessment required by paragraphs (a)(2), (d), and (e) of this section in the facility's operating record as required by § 257.105(f)(5), (10), and (12).
.....

(4) *Closure of the CCR unit.* An owner or operator of a CCR unit who either fails to complete a timely safety factor assessment or fails to demonstrate minimum safety factors as required by paragraph (e) of this section is subject to the requirements of §257.101(b)(2) unless the conditions set forth in paragraph (f)(5) of this section are met.

(5) *Extension of Safety Factor Assessment Demonstration.* The time frame for an owner or operator to make the initial demonstration that a CCR unit meets the minimum safety factors as required by paragraph (e) of this section may be extended to no later than April 17, 2018 provided that the following conditions are met:

(i) The owner or operator obtains a certification by a qualified professional engineer that there is no imminent threat of failure of the CCR unit during the extended time period, not to exceed April 17, 2018, for the owner or operator to make the initial demonstration that the CCR unit meets the minimum safety factors. The certification must be based on the structural integrity assessment factors in section 257.73(d) and from a physical/visual inspection of the CCR unit conducted no more than 90 days prior to October 17, 2016;

(ii) the owner or operator obtains from the state agency responsible for dam safety or the appropriate state environmental protection agency a written statement verifying that the state agency has independently reviewed the certification made in paragraph f(5)(i) of this section and concurs that such certification is accurate;

(iii) the owner or operator demonstrates that it is not feasible to make the initial safety factor demonstration by October 17, 2016, due to factors beyond the control of the owner or operator, including, but not limited to, delays in obtaining the necessary federal and/or state permits to conduct the necessary modifications to the CCR unit or weather conditions and other seasonal limitations on construction.

(iv) the owner or operator's demonstration includes a detailed schedule for completion of the modifications to the CCR unit so as to ensure full compliance with all dam safety factors no later than April 17, 2018; and

(v) the demonstration includes a signed statement by the owner or operator or an authorized representative that all information in the demonstration is true, accurate and complete. The statement must include the following language:

I certify under penalty of law that I have personally examined and am familiar with the information submitted in this demonstration and all attached documents, and that, based on my inquiry of those individuals immediately responsible for obtaining the information, I believe that the submitted information is true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment.

If, notwithstanding the above conditions being met, the CCR unit does not meet the dam safety factors by April 17, 2018, the CCR unit is subject to the requirements of §257.101(b)(2).

Radtke, Meghan

From: Roewer, James <JRoewer@eei.org>
Sent: Wednesday, July 15, 2015 4:02 PM
To: Stanislaus, Mathy; Bergman, Shawna; Johnson, Barnes; Breen, Barry
Subject: RE: CCR Rule - Impoundment Safety Factor Assessment Follow-up

Mathy, I recall that APS was going to provide some info re Indian Lands, and that we would think more on your suggestion about using consent decrees to get a deadline extension. Was there something else you had in mind?

Jim

From: Stanislaus, Mathy [mailto:Stanislaus.Mathy@epa.gov]
Sent: Wednesday, July 15, 2015 3:47 PM
To: Roewer, James; Bergman, Shawna; Johnson, Barnes; Breen, Barry
Subject: RE: CCR Rule - Impoundment Safety Factor Assessment Follow-up

Jim: I'm checking in this.

Sent from my Windows Phone

The remaining portion of EPA 105 falls within EPA 104.

Behan, Frank

From: Parker, Robin on behalf of Johnson, Barnes
Sent: Monday, July 27, 2015 5:10 PM
To: Roewer, James
Cc: Stanislaus, Mathy; Bergman, Shawna; Breen, Barry; Devlin, Betsy; Behan, Frank; ORCR IO
Subject: CCR Rule - Impoundment Safety Factor Information Needs
Attachments: Safety factor information needs.docx

Dear Jim:

We have been thinking seriously about the request for a change in our regulations to allow CCR surface impoundments additional time to comply with the required factors of safety for structural stability. As we have stated, we would need a record for such a proposed regulatory change. In order to further the conversation on this topic, we have developed the attached list showing the type of information that we would need to have in our record to support such a proposal.

We hope to discuss this in more detail at our meeting this Thursday. In the meantime, should you have any questions, please contact Betsy Devlin [devlin.betsy@epa.gov] or Frank Behan [behan.frank@epa.gov]. We look forward to our continued conversations on this topic.

Barnes Johnson

USEPA | Resource Conservation and Recovery | Tel 703-308-8895 |
johnson.barnes@epa.gov

Information needs for issue regarding timeframes for existing CCR surface impoundments to complete the initial safety factor assessment (40 CFR §257.73(e) and (f))
Draft July 27, 2015

For each existing CCR surface impoundment that will be unable (or anticipates to be unable) to meet the October 17, 2016 deadline specified in §257.73(f)(1) to complete the initial safety factor assessment:

1. Provide the CCR unit name, the name of the owner or operator of the CCR unit, and the facility name and location (city and state).
2. Provide the height (feet) (as defined in §257.53) and storage volume (acre-feet) of the CCR unit.
3. Identify if the CCR unit is a “high hazard potential CCR surface impoundment” as that term is defined in §257.53. If so, provide the most recent date that such classification was made for the CCR unit.
4. For the factors of safety specified in §257.73(e)(1)(i)-(iv), identify the safety factor and loading condition that cannot be achieved by the rule deadline of October 17, 2016. In addition, provide the date and results from the most recent effort to calculate safety factors for the CCR unit, along with the name of the entity that made such determination.
5. Describe the specific engineering improvements necessary for the CCR unit to meet the factors of safety specified in §257.73(e)(1)(i)-(iv).
6. Provide information on any local, state, tribal, or federal permits or approvals that will be needed prior to implementing engineering improvements to the CCR unit. In addition, describe the actions that the owner or operator of the CCR unit will have to complete in order to obtain such permit or approval to implement the engineering improvements.
7. Provide a detailed schedule and supporting information, if available, for completing all activities necessary for the CCR unit to meet the factors of safety specified in §257.73(e)(1)(i)-(iv). This information should clearly support the conclusion that the engineering improvements necessary for the CCR unit to meet the required safety factors cannot be achieved by the October 17, 2016 deadline.
8. Regarding the issue of achieving minimum safety factors by the October 17, 2016 deadline, describe any outreach to or engagement with state, tribal or federal (other than EPA) officials. In addition, provide information on the outcome of such engagement.

9. Regarding contingency procedures that are currently in place to ensure the continued operation of the steam-generating unit, provide information on actions the facility would take in the event the CCR unit suddenly becomes unavailable for CCR receipt (e.g., in the event of an emergency requiring the removal of the CCR unit from service).
10. Provide information on alternative disposal capacity to the CCR unit that exists either on-site or off-site of the facility.
11. Provide information on the steam-generating unit that would be adversely impacted should the CCR unit become unavailable for CCR receipt, e.g., the megawatts of generating capacity that would be lost, the percentage of total generating capacity by the facility that such loss represents. In addition, provide information on any documented electric reliability concern determined by a reliability expert regarding the electric-generating unit(s) that would be adversely impacted by the CCR unit being unavailable for CCR receipt. For purposes of this question, reliability experts include, but are not limited to, the Federal Energy Regulatory Commission, Regional Transmission Operators, Independent System Operators and other Planning Authorities, the North American Electric Reliability Corporation and affiliated regional entities, and state public service commissions and public utility commissions.

Radtke, Meghan

From: Roewer, James <JRoewer@eei.org>
Sent: Wednesday, September 02, 2015 1:58 PM
To: Johnson, Barnes
Subject: CCR Rule Follow-up
Attachments: removed.txt

Categories: Record Saved - Shared

Barnes,

In follow-up to our telephone conversation this morning, this is to reiterate that the utility industry has listened closely to EPA's suggested approach for addressing our concerns with the timing of the CCR rule's safety factor assessment certification requirement and we agree that working with the states through the state solid waste management plan process offers the most realistic, near-term solution to the issue. With that said, ensuring that interested states are in fact able to incorporate the necessary elements of the CCR rule into their respective SWMPs in a timely manner will require EPA's ongoing work with the states, and I appreciate your interest in working toward that goal.

We also believe that addressing this issue through the SWMP process preserves Agency resources to revisit other aspects of the CCR rule that warrant regulatory modifications, including, for example, ensuring that the rule's alternative closure provision is amended to specifically include the consideration of non-CCR wastewaters in determining whether there is no alternative disposal capacity for a particular impoundment. We look forward to continuing to work with the Agency in a constructive manner as USWAG members begin to implement the CCR rule later this fall.

Jim

Jim Roewer
Executive Director
USWAG

